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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/741,940	12/20/2000	Zhigang Rong	NC17510 (NOKI02-17510)	5743
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SCHEEF & STONE, L.L.P. 5956 SHERRY LANE SUITE 1400 DALLAS, TX 75225			MOORE JR, MICHAEL J	
			ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/741,940	RONG ET AL.
	Examiner Michael J. Moore, Jr.	Art Unit 2666

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 20 December 2000.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-21 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-21 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 20 December 2000 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____.
 4) Interview Summary (PTO-413).
 Paper No(s)/Mail Date _____.
 5) Notice of Informal Patent Application (PTO-152)
 6) Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "86" has been used to designate both up-conversion circuitry and transmit circuitry portion 54 as described in the specification. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: Element numbers "14", "54", and "76" are missing from Figure 1. These reference numbers need to be provided in Figure 1 in order to correspond with the specification. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
3. The drawings are objected to because of the following informalities: In Figure 1, there is some confusion regarding elements "32", "36", and "38". It is believed that the arrow of element "38" should be pointing in the opposite direction as is currently shown. Also, in Figure 1, there is some confusion regarding the element 84 "modulator/code 12". It is believed that this element should be named "modulator/coder/Walsh-code spreader" in order to correspond with the specification. Also, in Figure 3 there is some confusion regarding the values "beta", "R", and "TF". There does not appear to be any

support for the meaning of these variables in the specification. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because of the following informalities: On page 5, line 25, the word "an" is missing before "apparatus". On page 6, line 16, the word "pursuance" should be "pursuant". On page 6, line 21, the word "polarity" is believed to be "plurality". On page 7, line 13, "is calculated" is not needed. Also, on page 7, line 13, the word "is" is not needed before "measured". On page 7, line 29, "were of the communication system" is not needed. On page 9, line 2, the word "pursuance" should be "pursuant". On page 9, line 8, the word "an" is missing before "apparatus". On page 9, line 16, the word "an" is missing before "exemplary". On page 9, line 24, the word "an" is missing before "apparatus". On page 10, line 22, the word "a" should be "at". On page 11, line 8, there is some confusion regarding the phrase "packet high is to data". On page 11, line 10, "often embodiment" is not needed. On page 13, line 14, "value" should be "values". On page 13, line 18, "of" is not needed and the word "value" should be "values". On page 13, line 19, the word "exempting" should be "exemplary". Lastly, on page 14, line 10, it is believed that the phrase "Schedule B" should be "schedule". Appropriate correction is required.

Claim Objections

5. Claims 1, 13, 14, and 21 are objected to because of the following informalities:

Regarding claim 1, the word "an" is missing before "apparatus" on line 3.

Regarding claim 13, the word "form" should be "for" on line 2.

Regarding claim 14, the word "the" is not needed before the word "at" on line 2.

Also, the word "shard" should be "shared" on line 6 and a semicolon should be used after the word "channel" instead of a comma on line 6.

Regarding claim 21, the word "the" is not needed before the word "at" on line 2.

Also, a semicolon should be used after the word "channel" instead of a comma on line 6.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-13 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Ghosh et al. (U.S. 6,366,601). The Ghosh et al. reference teaches all of the limitations of the listed claims with reasoning that follows.

Regarding claim 1, a communication system where data is communicated between a first station and at least a second station is anticipated by the data transmission system of Figure 1. "Resource allocation defined in terms of a first

communication indicia and a second communication indicia" is anticipated by the modulation coding schemes (MCS) 111 and the code rates 110 shown in Figure 1. "A storage device having memory locations for storing a matrix defined by values of the first communication indicia and the second communication indicia, each element of the matrix of an exemplary threshold value" is anticipated by the table shown in Figure 1 containing MCS 111 indicia, and code rate 110 indicia, which is stored in encoder/modulator 107. "A comparator coupled to said storage device, said comparator for comparing a traffic-channel threshold value with at least some of the exemplary threshold values" and "a selector coupled to said comparator, said selector for selecting the resource allocation responsive to comparisons made by said comparator" are both anticipated by the encoder/modulator 107 of Figure 1, which selects a modulation coding scheme based on carrier quality criteria (traffic-channel threshold value) as stated in column 2, line 66 – column 3, line 10.

Regarding claim 2, the apparatus of claim 1 where the communication system is a multi-code, multi-rate communication system is anticipated by the data transmission system of Figure 1 that makes use of different coding rates 110 and different spreading codes 108. The first communication indicia comprising a coding indicia is anticipated by the code rate indicia 110 shown in Figure 1.

Regarding claim 3, "the communication system comprises a CDMA communication system, which utilizes Walsh coding with N codes" is anticipated by the CDMA system spoken of in column 1, lines 51-67, which states that spreading codes 108 of Figure 1 may be orthogonal Walsh codes. The table shown in Figure 2 where

indicia corresponding to differing values of codes are shown anticipates "The coding indicia which defines, in part, the matrix stored at said storage device".

Regarding claim 4, the apparatus of claim 1 where the communication system is a multi-code, multi-rate communication system is anticipated by the data transmission system of Figure 1 that makes use of different coding rates 110 and different spreading codes 108. "The second communication indicia comprising a modulation coding scheme (MCS) value, and wherein the matrix stored at said storage device is defined, in part, by values of the modulation coding scheme" is anticipated by the MCS values shown in Figures 1 and 2.

Regarding claim 5, "each value of the modulation coding scheme is representative of a level of modulation coding" is anticipated by the MCS values shown in Figures 1 and 2.

Regarding claims 6 and 7, the apparatus of claim 1 where the communication system comprises a radio communication system having a first communication station as a part of a network infrastructure and a second communication station as a mobile station is anticipated by the communication system spoken of in column 1, lines 51-66. This communication system may have a base station as a source and a mobile station as a destination. As shown in Figure 1, encoder/modulator (storage device) 107, which stores tables containing indicia 111, 109, and 110, is located at the source.

Regarding claim 8, the traffic channel threshold value being representative of communication quality levels of the traffic channel is anticipated by encoder/modulator

107, which selects a modulation-coding scheme based on a carrier quality criteria as stated in column 2 line 66 – column 3, line 10.

Regarding claims 9-11, the apparatus of claim 8 with a forward and reverse communication link between first and second communication stations is anticipated by the communication spoken of in column 1, lines 51-66. “The traffic channel threshold value being representative of communication quality levels upon the forward link” is anticipated by encoder/modulator 107, which selects a modulation-coding scheme based on a carrier quality criteria such as carrier to interference ratio (signal to noise) between the source user and destination user as stated in column 2 line 66 – column 3, line 10.

Regarding claim 12, a coder and a modulator coupled to said selector for coding and modulating data to be communicated upon the traffic channel responsive to first and second indicia is anticipated by encoder/modulator 107 of Figure 1.

Regarding claim 13, a coder and modulator that performs Walsh-code spreading using a number N of Walsh codes is anticipated by encoder/modulator 107 of Figure 1, which makes use of spreading codes 108 that may be Walsh codes as stated in column 3, lines 27-28.

Regarding claim 20, a method for communicating data between a first and second communication station where resource allocation is defined in terms of a first and second communication indicia is anticipated by the modulation coding schemes (MCS) 111 and the code rates 110 shown in Figure 1. “Forming a matrix of exemplary threshold values indexed by values of the first and second communication indicia” is

anticipated by the table shown in Figure 1 containing MCS 111 indicia, and code rate 110 indicia, which is stored in encoder/modulator 107. "Comparing a traffic channel threshold value with at least some of the exemplary threshold values of the matrix" and "selecting, responsive to comparisons formed during said operation of comparing, the resource allocation defined in terms of the first and second communication indicia" are both anticipated by the encoder/modulator 107 of Figure 1, which selects a modulation coding scheme based on carrier quality criteria (traffic-channel threshold value) as stated in column 2, line 66 – column 3, line 10.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. **Claims 14-19 and 21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ghosh et al. (U.S. 6,366,601) in view of Tiedemann, Jr. et al. (U.S. 6,335,922).

Regarding claims **14 and 21**, Ghosh et al. teaches the apparatus of claim 1 and the method of claim **20**. Ghosh et al. fails to teach a scheduler that is used to schedule shared access to a channel shared between a first and a second station as well as the first and a third station. However, Tiedemann, Jr. et al. teaches a scheduler 12 within base station controller 10 in Figure 2 that is used to schedule the use of channels between a base station 4 and mobile station(s) 6. At the time of the invention, it would have been obvious to someone of ordinary skill in the art given these references to combine the data transmission apparatus of Ghosh et al. with the channel scheduler of the Tiedemann, Jr. et al. reference. A motivation for doing so would be to use channel scheduling for improved utilization of the forward link as stated in column 8, lines 1-10 of the Tiedemann, Jr. et al. reference.

Regarding claims **15 and 19**, Ghosh et al. teaches the apparatus of claim **1**. Ghosh et al. fails to teach the apparatus of claim **14** where the scheduler schedules channel access based on a traffic channel threshold value. Ghosh et al. also fails to teach where the scheduler schedules channel access based upon a quality of service (QoS). However, Tiedemann, Jr. et al. teaches that channel scheduler 12 of Figure 1 is tasked with the function of allocating resources to each scheduled user by transmitting as many scheduled and unscheduled tasks as can be supported within system capacity constraints (traffic channel threshold value) to improve quality in the communication by increasing the transmission rate and thus minimizing the transmission delay of the data

(QoS). At the time of the invention, it would have been obvious to someone of ordinary skill in the art given these references to combine the data transmission apparatus of Ghosh et al. with the channel scheduler of the Tiedemann, Jr. et al. reference. A motivation for doing so would be to use channel scheduling for improved utilization of the forward link as stated in column 8, lines 1-10 of the Tiedemann, Jr. et al. reference.

Regarding claims 16-18, Ghosh et al. teaches the apparatus of claim 1 where packet data is communicated as shown in Figure 2. Ghosh et al. fails to teach the apparatus of claim 15 where a timer is used for timing periods of pendency of packet data at a buffer prior to channel access. Ghosh et al. also fails to teach where the scheduler schedules channel access based upon this packet pendency within a buffer. However, Tiedemann, Jr. et al. teaches a timing element 96 within scheduler 12 in Figure 3 that provides controller 92 with the timing signals necessary to perform scheduling (manages data in queue) of the forward link as stated in column 8, lines 31-35. Tiedemann, Jr. et al. also teaches a memory element 94 within scheduler 12 of Figure 3 that contains a queue (buffer) that contains the data to be transmitted to remote station(s) 6. At the time of the invention, it would have been obvious to someone of ordinary skill in the art given these references to combine the data transmission apparatus of Ghosh et al. with the timing element and channel scheduler of the Tiedemann, Jr. et al. reference. A motivation for doing so would be to use channel scheduling for improved utilization of the forward link as stated in column 8, lines 1-10 of the Tiedemann, Jr. et al. reference.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yun et al. (US 2002/0067692), Allpress et al. (U.S. 5,920,552), Burns (U.S. 6,611,512), Kondo (U.S. 6,650,686), Shanbhag (US 2002/0037015), Wei et al. (US 2002/0110102), Kim et al. (U.S. 6,707,788), and Lee (U.S. 6,473,395) are all references that contain material pertinent to this application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Moore, Jr. whose telephone number is (703) 305-8703. The examiner can normally be reached on Monday-Friday (8:30am - 5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S. Rao can be reached at (703) 308-5463. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael J. Moore, Jr.
Examiner
Art Unit 2666

Seema S. Rao
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